

What is claimed is:

1. An oil free screw compressor comprising:
 - a compressor main body having a male rotor and a female rotor which are received in a casing and meshed with each other,
 - first and second bearings for supporting the male rotor and the female rotor;
 - and a high speed motor driven by a high frequency inverter, said high speed motor having a motor shaft in which the motor rotor is formed,
 - a third bearing for rotating and supporting the motor shaft;
 - said first, second and third bearings being made the same with respect to each other.

2. An oil free screw compressor comprising:
 - a compressor main body having a male rotor and a female rotor which are received in a casing and meshed with each other,
 - first and second bearings for supporting the male rotor and the female rotor,
 - and a first shaft sealing apparatus for preventing an oil from entering into a compression chamber formed by said casing, the male rotor and the female rotor;
 - and a high speed motor driven by a high frequency inverter, said high speed motor having a motor shaft in which the motor rotor is formed,

a third bearing for rotating and supporting the motor shaft and a second shaft sealing apparatus for preventing a lubricating oil for lubricating the third bearing from entering within the high speed motor;

said first shaft sealing apparatus and said second shaft sealing apparatus being made the same.

3. An oil free screw compressor comprising:

a compressor main body having a male rotor and a female rotor which are received in a casing and meshed with each other,
first and second bearings for supporting the male rotor and the female rotor,

and a first shaft sealing apparatus for preventing an oil from entering into a compression chamber formed by said casing, the male rotor and the female rotor;

and an electric motor driven by an inverter and connected to a suction side of said compressor main body, said electric motor having a motor shaft in which the motor rotor is formed;

a third bearing for rotating and supporting the motor shaft and a second shaft sealing apparatus for preventing a lubricating oil for lubricating the third bearing from entering within the electric motor;

said first, second and third bearings being made the same with respect to each other, and said first shaft sealing apparatus and said second shaft sealing apparatus being made the same.